

Gender and Sexual Diversity Issues in Physics: The Audience Speaks

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I. INTRODUCTION

The session “[Gender and Sexual Diversity Issues in Physics](#)” took place at the APS March Meeting 2012 in Boston, MA on the 28th of February[1]. The session consisted of four invited talks from invited speakers Susan Rankin (in fact presented by Eric Patridge of [oSTEM](#) and Ramón Barthelemy), Michael Ramsey-Musolf, Janice Hicks and Elena Long, followed by a panel discussion where the invited speakers were joined by Ted Hodapp. Over 120 individuals attended some part of the session according to a rough headcount by the organizers and perhaps half of those stayed for the whole time.

Since a theme of the session was on gathering data and creating conversation, a survey (included as Appendix A) was designed by Wouter Deconinck and Savannah Garmon with input from Tim Atherton, Elena Long, Ned Henry, Nicole Ackerman and Michael Falk. The questions were intended to be inclusive, i.e. to invite as broad a range of thoughts on the session as possible, and also to allow participants to give a preliminary indication of their thoughts on the role of the APS. A total of 43 responses were received. Above all, it appears that the session was viewed very positively, being characterized by respondents as “*Wonderful!*”, “*Important*”, “*Informative*” and “*Strengthening*”.

The purpose of the present paper is to document some of the ideas presented in the session in section II and to report the responses from the audience in the survey in sections III–VI. To assemble a coherent narrative from the survey, the questions and responses have been divided into four broad areas: demographic data, thoughts on the session itself, general thoughts on steps toward progress and, finally, action items. In these sections, only light interpretation has been added as we believe many of the comments speak for themselves. All responses have been included in this report except for comments that were nearly identical in wording; it is noted where such responses have been omitted to avoid repetition. Not all questions were answered by all respondents and so tallies of replies do not typically add up to the total number of responses. The report concludes in section VII by drawing a series of recommendations from the data.

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II. THE SESSION

The session began with a talk entitled *“The State of Higher Education for STEM LGBTQQ Faculty/Staff,”* prepared by Susan Rankin[2] and presented by Eric Patridge and Ramón Barthelemy. The talk presented results from a national climate survey written by Prof. Rankin and conducted by the Q Research Institute for Higher Education (QRIHE) and Campus Pride[3, 4]. The survey focused on observation and experience of exclusionary behavior and the effects of this behavior on faculty and staff retention. According to the survey results, LGBT[14] faculty members in STEM fields are more likely to be out than their colleagues in other fields. Approximately half of all STEM faculty participating in the survey reported observing exclusionary behavior, while 20% report had experienced it. Of the STEM faculty, 50% had considered leaving their departments due to this behavior and 70% report that the exclusionary behavior came from the administration rather than the student body. The faculty members who reported experiencing exclusionary behavior were far more likely to consider leaving their institution or the field. The presentation highlighted the necessity for more thorough research into the climate in STEM fields and the practical necessity for employers in STEM fields to create an environment in which LGBT faculty feel welcome in order to increase retention rates.

Michael Ramsey-Musolf presented the second talk of the session entitled *“Shattering the Lavender Ceiling: Sexual Minorities in Physics”*[5]. Prof. Ramsey-Musolf emphasized the role that scientists have historically played in human rights struggles, noting as an example the work of the APS Committee on International Freedom of Scientists[6]. He stated explicitly his own perception of problems faced by the LGBT community in STEM fields: a hostile climate, exclusion from opportunities and non-receptivity to concerns by those in positions of relative power. He observed that these problems are caused by invisibility, ignorance and an absence of data and they result in isolation, alienation, loss of talent from field and perpetuation of stereotypes. Ramsey-Musolf expressed optimism that scientists as a group want to do the right thing and called on the community to share their stories, adopt non-discrimination policies openly, establish a task force explicitly dedicated to LGBT rights and to create more resources such as “out lists” to help raise the bar for the climate in our fields.

Professor Janice Hicks shared her personal story as a physical chemist and a lesbian in her talk *“Why Awareness of LGBT issues in the Physics Community Makes Sense”*[7]. Prof. Hicks was not out as a lesbian to her colleagues until she left her faculty position at age forty, having been uncomfortable with the climate throughout her career. Official acceptance of her identity at her new position at the NSF was an extremely important factor in her decision to stay there. Moving forward, Hicks emphasized the need for education to combat stereotypes, for state legal protections regarding employment discrimination and for climate surveys that hold individual institutions accountable and provide public relations incentives to make students and employees feel welcome.

The final talk was given by Elena Long, entitled *“Physics Climate as Experienced by LGBT+ Physicists”*[8]. This talk discussed the history of the organizing committee for this session and the website [LGBTIQQAP+ Physicists](#) that she set up[9]. Long also presented the results of a climate survey conducted through the Forum of Graduate Student Affairs[10]. The survey focused on reasons why students in STEM fields feel unsafe or uncomfortable. Nearly all of the survey respondents who identify outside of the gender binary reported feeling unsafe in their workplace for one reason or another. Furthermore, racial and religious minorities, especially people with disabilities, were more likely to report feeling unsafe due to gender related issues, highlighting the intersectionality of social justice issues in our fields. Long concluded by emphasizing the need for more data, more education and more awareness in our fields.

A panel discussion concluded the session, focusing principally on how best to address the issues raised in the preceding talks. The group discussed the challenges of presenting problems which are often qualitative by nature to a community dedicated to quantitative research. Funding sources for further research and organization were discussed, with an emphasis on securing government recognition as an “underrepresented minority” and on increasing awareness among philanthropic individuals and organizations which would be otherwise unaware of this issue. Michael Ramsey-Musolf advocated for creating public “out lists” to decrease the isolation of LGBT identified people in STEM fields, pointing out that fixing the problem is both a practical necessity for the field and a basic human rights issue. The possibility of organizing mentorship programs focused on sexual and gender identities through APS was raised. Ted Hodapp of the APS encouraged members of the APS to help improve the climate for LGBT physicists noting that, as a large and primarily volunteer organization, the APS relies on its members to advance such causes. The panel ended with a personal call for everyone in attendance to bring their full intellectual power to bear on this problem, to hold organizations and powerful individuals personally accountable for their failures and to confront prejudice and discrimination directly and personally.

Table I: Do you identify as a sexual/gender minority?

Yes	21
No	20
Other	1
No response	1

Table II: How do you identify?

Gay	10
Lesbian	2
Female ^a	2
Trans	3
Bi	2
Asexual	1
Inter	1
Queer	3

^aWe note there is much ambiguity in this identity. One such respondent wrote “I identify as a gender minority being a female physicist”.

III. DEMOGRAPHIC

We now turn to our analysis of the results of the survey. Only half of the respondents identified as a sexual or gender minority (table I). The single “other” respondent explicitly identified as “F” (for female). Those who considered themselves as belonging to a minority were invited to explain how they identified: the identities provided are listed in table II; note that the responses are not mutually exclusive and some respondents provided more than one of these identities. Two respondents chose to explicitly add “male” having identified as “gay”. Additionally, three respondents who did not identify as belonging to a sexual/gender minority chose to identify themselves as an “ally”.

The majority of participants were students, as is evident from the question on career stage displayed in table III. Two students explicitly noted that they were graduate students; one as an undergraduate. Of those who selected “other”, three identified themselves as press or science writers and one person as a researcher.

IV. THE SESSION

To assist in understanding how people came to know of the session, a question was posed to this effect and is reported in table IV. While it is clear that advertising at the meeting is crucial, several people specifically mentioned the Epitome[11]. The Google group LGBT+ Physicists[12] was also mentioned.

The session was clearly very much appreciated by the audience (see table V), although a selection bias in those who filled out the survey should be considered.

Respondents were then asked to describe the session, which elicited universally positive responses[15] like

“Enlightening”
“Important”
“Nice balance”
“informative & strengthening”
“attentive/sensitive/nuanced commentary healthy discussion”
“Interesting”
“Wonderful! Good balance of information/data and personal stories.”
“very useful. Great information.”
“It has brought out assumptions, issues from the background into the open.”

Table III: At what stage of your career are you?

Student	25
Postdoc	4
Pre-tenured faculty	1
Tenured faculty	7
Other	5

Table IV: When and how did you hear about the panel?

At the meeting	29
From a friend	3
Specific announcement	3
Other	7

Table V: Do you think it was worth attending the session?

Yes	33
“Sort of” ^a	1

^aIn keeping with the desire to allow respondents to choose their own words, no prescribed response was provided (i.e. Yes/No); the respondent is therefore quoted verbatim.

“worthwhile, especially in terms of networking”

What were they taking away?

- **Need for data:** *“The need for much better numbers on the size and needs of the community” [many nearly identical comments]*
- **Role models:** *“There are other people like me who are further in their careers. I know a number of queer students or allies that are students, but I have no visible, living queer scientist role models.”*
- **Awareness:** *“I learned more about specific issues that I hadn’t thought about before, esp. for trans people”*

“Paying more attention to the manifestations of exclusive behavior and the lavender ceiling, mentioning/welcoming sexual minorities with students.”

“More ideas about how to create blanket verbiage and approaches that address discriminatory policies and practices applied to all minority, underrepresented members (ethnic, gender, sexual). I’d like to take these ideas to my home institution.”

- **Importance of allies:** *“need more info for non-LGBTQ on how to be more involved”*
- **Pride:** *“More specifically a ‘Physics Pride’”*
- **“We need to continue the discussion”**

Respondents were also asked for things that they agreed or disagreed with and for any other other comments about any of the talks. None of these questions elicited many responses. One respondent felt that

“Having an ‘out list’ is, I think, dangerous.”

Several people mentioned that they were *“deeply moved”* by Prof. Ramsey-Musolf’s brief account of Alan Turing’s story and the subsequent apology by Gordon Brown, former Prime Minister of the UK. Several others mentioned that speaking openly and hearing stories was beneficial. Some of the responses touched on themes addressed earlier, e.g.

“the idea of discussion/teaching of history & philosophy of science; in general, having courses considering the community of scientists/science could be helpful.”

One respondent felt that

“I think the name of this session isn’t quite right. It is unclear whether it includes women in science issues since women are a ‘gender minority’ in physics. Something that specifically said LGBT+ or something like that might be better or just saying sexuality and gender instead. It’s a more well known phrase.”

The value of the session was eloquently summarized by another respondent:

“I think showing successful academics who are out is an important way to dispel the notion that being out precludes or limits one’s professional opportunities. So thank you to your speakers.”

Table VI: How often do you discuss sexual and gender issues with other scientists?

Daily	0
Weekly	6
Monthly	5
Seldom	25
Never	7

Table VII: Do you consider it to be an important goal for sexual and gender minorities to take on a more visible role in science nationally?

Yes	38
No	2
Uncertain	1

V. MOVING FORWARD

An indication of the *status quo* may be seen in table VI, where it is apparent that most respondents seldom or never discuss sexual or gender issues with other scientists. Four respondents qualified their responses to indicate a limitation on the circle of people they did discuss these issues with, specifying friends or other female physicists.

Perhaps because of this, there was almost unanimous support for increased visibility of sexual and gender minorities (see table VII). Two respondents added that this was also desirable internationally (this was also raised in the question afterwards on how to achieve the visibility). One dissenting respondent qualified their response thus

“I do not agree that the visibility is the primary goal of the LGBT+ community. I think the primary goal is to make people really don’t care about any factors except for professionalism of a physicist.”

Participants were asked if they had ideas about how to increase the visibility. Quite a few ideas were presented, often by more than one person. Some themes grouped together with representative comments:

- **Being out:** *“It shouldn’t be their responsibility but they can help dispel stereotypes about the minorities and of science[...] Being out (and vocal) might help accomplish it.”*
- **Education (within physics):** *“Design strategies to improve the education of students, mainly undergraduate, on these issues”*
- **Education/publicity (of the general public):** *“I think [...] public service messages highlighting queer scientists and discussing the issue would be good, as well as putting queer characters in children’s programs.”*
“perhaps reaching out LGBT+ serving media outlets with suggested contributed content highlighting LGBT+ serving scientists & their work, or doing the same with local news outlets.”
- **Leaders:** *“I think making more of an effort to represent open sexual minorities to represent leadership roles.”*
“Get them in more leadership positions. More visibility!”
- **Mentoring:** *“More active mentoring by faculty and older graduate students. Most scientists are accepting and liberal and many are allies, but it’s often unclear who they are.”*
- **Grassroots effort:** *“While I do want acceptance and integration, it is hard to imagine this acceptance and integration to occur primarily through centralized efforts. From my own experience, individually speaking with colleagues and being locally visible goes a lot further. Perhaps supporting the individuals efforts is a good role for a central organizing group.”*
- **The session itself:** *“This discussion is a good start.”*

Respondents were then invited to give other suggestions on how to move the conversation forward regarding the role of sexual and gender minorities in science. While there were fewer responses to this question, they were generally very detailed. By theme:

- **Collect data:** *“Find out the percentage of LGBT people in the science community”*

- **Empower allies:** *“Start by making it an issue. Speaking as an ‘ally’, I have trouble knowing what I can do to help. What can those of us who are part of the majority do? We need input on that.”*

“Improve the comfort level of non-LGBT faculty”

“I think sexuality and gender minority issues need to be made an issue that heteronormative people discuss.”

- **Share stories, data and practices:** *“Tell more stories about minority members at research institutions and at larger conferences and workshops, present more statistics and data about how other (even non-academic) organizations promote environments of equality as models to follow and present data about how significant of a percentage minorities comprise in populations, social groups to emphasize how ‘normal’ minority members are in society as a whole (by ‘normal’ I mean not fringe or niche or rare) and thus merit proper representation.”*

“Shared experiences and development of best practices may help.”

- **Scholarships:** *“It might be helpful to have similar [to scholarship for women in physics] programs for LGBT etc. students or if there are not enough LGBT people in a given community LGBT issues and women’s issues because although there are plenty of unique experiences to each community there are also shared experiences, many around the kind of stereotypes part of both group’s issues include the prevalence of the idea of science being a ‘masculine’ activity.”*

- **More opportunities to talk:** *“NETWORK!”*

“More sessions like this! I’m amazed at how little these issues are being discussed and how few scientists are out. I suspect that a lot of people think that the academy is a liberal atmosphere and thus - we’re doing well, but that isn’t enough (and often isn’t even true).”

For future sessions, it is notable that one person included in their reply to this question that

“I felt I was outing myself by simply walking into this room and was afraid to attend the talks.”

and in response to another question, a similar note was struck

“the assumption seemed to be that most of the audience was LGBTQ. I think a greater effort to reach out to allies would have been helpful.”

One respondent left a detailed comment

“I find it ironic that you are discriminatory/biased toward academia. Are there no LGBT+ issues among physicists in industry or national labs? Most physics students do not stay in academia anyway.”

suggesting that future work should include exploration of this wider focus (see recommendations).

VI. ACTION

Respondents were invited to rank some possible actions that the APS could take to be more inclusive of LGBT+ people in physics. Since this is a vote, there is no perfect procedure^[16] for ranking these preferences; we used four different methods as described in Appendix B. The order of preference of the various options are displayed in table VIII. Notice that the ordering of the top three preferences does **not** change under our selection of reasonable ranking strategies.

It is clear the strongest preference for immediate action is for a national survey, with strong support for “best practice guidelines” and also support for representation; the relative strength of the recommendations at the conclusion of this report is intended to reflect this ranking. Respondents seemed to prefer the idea of a committee along the lines of CSWP to the idea of a subcommittee, although one respondent noted *“surely the same”* for these two options. For other possible activities, respondents suggested:

“Mentoring programs”

“A group for students and others to get together & organize.”

“Publish brochures on contributions of queer/LGBT+ scientists. Role models are important in forming positive identities.”

“Make explicit statements online”

Table VIII: Rank the following actions that the APS could take to be more inclusive of LGBT+ people in physics. Models A, B, C, D reflect different scoring systems used to obtain the overall rank (see Appendix B); numbers indicate priority of action, with 1 corresponding to highest priority.

Action	Overall Rank			
	A	B	C	D
Sponsor a conference to explore the status of LGBT people in physics.	6	5	5	6
Set up a committee along the lines of the CSWP (Committee of the status of women in physics) to represent LGBT people in physics.	3	3	3	3
Conduct or facilitate a national survey to gauge the needs of and present climate for LGBT people in physics.	1	1	1	1
Set up a subcommittee within the broader Committee on Minorities.	5	4	4	4
Develop "best practice" guidelines for Department Chairs to create an LGBT-inclusive environment.	2	2	2	2
Something else (with space for ideas)	4	6	6	5

“LGBT networking/social events”

[referring to best practice] *“Actually, this is really important. Even just a passing comment about how the department is a welcoming and safe space could really affect how the atmosphere is.”*

VII. RECOMMENDATIONS

By drawing together the choices made by respondents to the survey and also issues raised in responses, we conclude that the APS, partner organizations and the community of physicists who identify as a sexual or gender minority or an ally should:

1. Design and conduct, or support, a national survey to understand the experiences and climate for sexual and gender minorities in the physics community. Possible partners include, for instance, the American Institute of Physics which already carries out extensive surveys of Physicists[13]. Respondents to the present survey endorsed this as the **highest priority** of possible outcomes of the session at March meeting 2012 [see section VI].
2. Consult with department chairs and the private sector to produce and make available a set of “best practices”. This was endorsed as the second highest priority by survey respondents [see section VI].
3. Explore ways to represent people who identify as belonging to a sexual or gender minority who are not already represented by COM and CSWP; consider how the structure of these committees might facilitate exploration of intersectionality while continuing to address the unique issues faced by each kind of minority. This was endorsed as the third highest priority by survey respondents [see section VI].
4. Empower allies with resources and actionable items (e.g. encouraging them to participate in their institution’s version of Safe Zone). [see section V]
5. Explore the status of sexual and gender minorities in industry and national labs and make people in these career paths feel included in the discussion and in future events. [see section V]
6. Facilitate, provide and publicize *fora* for discussion of sexual and gender minority issues in physics, both online and at future APS conferences and other relevant opportunities. [see sections V and VI]
7. Facilitate, provide and publicize networking events for sexual and gender minority physicists. [see section V and VI]
8. Identify partners who might facilitate similar movements in other countries (e.g. Institute of Physics). Relate experiences and provide resources to support these efforts. [see section V]

9. Develop the website LGBTIQQAP+ Physicists as a central resource for information. Identify additional channels for advertising future similar sessions [see section IV].
10. At future events, vocalize the fact that the room includes both minority and non-minority people and that presence is no indication of minority status. Make the safety of the space explicit [see section V].

Acknowledgments

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- [1] URL <http://meetings.aps.org/Meeting/MAR12/SessionIndex3/?SessionEventID=168349>.
 - [2] URL <http://meetings.aps.org/link/BAPS.2012.MAR.J20.1>.
 - [3] URL <http://www.campuspride.org/research/qrihe.htm>.
 - [4] URL <http://www.campuspride.org>.
 - [5] URL <http://meetings.aps.org/link/BAPS.2012.MAR.J20.2>.
 - [6] URL <http://www.aps.org/about/governance/committees/cifs/index.cfm>.
 - [7] URL <http://meetings.aps.org/link/BAPS.2012.MAR.J20.3>.
 - [8] URL <http://meetings.aps.org/link/BAPS.2012.MAR.J20.4>.
 - [9] URL <http://lgbtphysicists.x10hosting.com/>.
 - [10] Unpublished internal report of the 2011 FGSA Climate Survey.
 - [11] URL http://meetings.aps.org/Meeting/MAR12/APS_epitome.
 - [12] URL <https://groups.google.com/forum/?fromgroups#!forum/lgbtphysicists>.
 - [13] URL <http://www.aip.org/statistics/>.
 - [14] We use the acronym LGBT (Lesbian Gay Bisexual Transgender) here in this report as it is widely recognized; we do not mean to exclude any other identities. Other longer but more inclusive versions of this acronym also exist, such as LGBTIQQAP+ (Lesbian Gay Bisexual Transgender Intersex Queer Questioning Allies Pansexual and all others).
 - [15] One respondent wished that more effort had been made to reach out to allies; this reply is discussed at the end of section V in the context of a similar reply to another question.
 - [16] Due to Arrow's impossibility theorem

APPENDIX A. The Survey

1. Do you identify as a sexual/gender minority (gay, lesbian, trans, etc.)?
2. If so, how do you identify?
3. At what stage of your career are you?
 - (a) Student
 - (b) Postdoc
 - (c) Pre-tenured faculty
 - (d) Tenured faculty
 - (e) Other [Space provided]
4. How often do you discuss sexual and gender issues with other scientists?
 - (a) Daily
 - (b) Weekly
 - (c) Monthly
 - (d) Seldom
 - (e) Never

5. Do you consider it to be an important goal for sexual and gender minorities to take on a more visible role in science nationally?
6. If so, do you have any thoughts on how that might be accomplished?
7. Do you have any other suggestions on how to move the conversation forward regarding the role of sexual and gender minorities in science?
8. Rank the following actions that the APS could take to be more inclusive of LGBT+ people in physics 1: most important, 6: least important
 - (a) Sponsor a conference to explore the status of LGBT people in physics.
 - (b) Set up a committee along the lines of the CSWP (Committee of the status of women in physics) to represent LGBT people in physics.
 - (c) Conduct or facilitate a national survey to gauge the needs of and present climate for LGBT people in physics.
 - (d) Set up a subcommittee within the broader Committee on Minorities.
 - (e) Develop "best practice" guidelines for Department Chairs to create an LGBT-inclusive environment.
 - (f) Something else: *[Space provided]*
9. When and how did you hear about the APS panel on sexual and gender diversity?
 - (a) At the meeting
 - (b) From a friend,
 - (c) Specific announcement
 - (d) Other: *[Space provided]*
10. Do you think it was worth attending the session?
11. How would you describe the session, in general terms?
12. What is one thing that you are taking away from this session?
13. Was there something presented that you particularly agreed with?
14. Was there something presented that you disagreed with?
15. Do you have any specific comments on a particular talk (feel free to respond to any, all or none)?

APPENDIX B. Ranking Preferences

As noted in section VI, there's no clear optimal procedure to discern a rank for candidate actions from a set of votes. Generically one can assign scores $1^{st} \rightarrow w_1$, $2^{nd} \rightarrow w_2$, etc. and sum the scores for each option over the set of responses. We used for different weighting schemes $A = (1, 0, 0, 0, 0, 0)$, $B = (1, \frac{1}{2}, \frac{1}{4}, \frac{1}{8}, \frac{1}{16}, 0)$, $C = (1, \frac{4}{5}, \frac{3}{5}, \frac{2}{5}, \frac{1}{5}, 0)$ and $D = (\frac{1}{2}, \frac{1}{2}, 0, 0, 0, 0)$, where each weighting vector was additionally normalized, to produce an overall score for each action; these are displayed in IX. The ranking deduced from these scores is displayed in table VIII.

Table IX: Rank the following actions that the APS could take to be more inclusive of LGBT+ people in physics. Models A, B, C, D reflect different scoring systems for the overall rank.

Action	Overall Score			
	A	B	C	D
Sponsor a conference to explore the status of LGBT people in physics.	1	3	5	2
Set up a committee along the lines of the CSWP (Committee of the status of women in physics) to represent LGBT people in physics.	7	8	8	9
Conduct or facilitate a national survey to gauge the needs of and present climate for LGBT people in physics.	16	12	10	14
Set up a subcommittee within the broader Committee on Minorities.	3	5	6	4
Develop "best practice" guidelines for Department Chairs to create an LGBT-inclusive environment.	10	10	9	11
Something else (with space for ideas)	4	2	1	3